

Specification for the book of courses

Study program		Computing and Informatics		
Module		Data Science		
Type and level of studies		Master studies		
The name of the course		Data Mining Techniques and Methods		
Lecturer (for lectures)		Stojković R. Suzana		
Lecturer/associate (for exercises)		Marković M. Ivica		
Lecturer/associate (for OFE)				
Number of ECTS		4	Course status (obligatory/elective)	Elective
Prerequisites				
Course objectives				
The goal of this course is to introduce students to major data mining tasks and with special emphasis on the using the data mining techniques and methods into text analysis and information retrieval systems.				
Course outcomes				
After completing this course, students should acquire theoretical knowledge of the principles of the work of the data mining tools and to be able to use existing datamining open source tools and to develop new.				
Course outline				
Theoretical teaching				
Data mining goal and application. Types of datasets and attributes. Data quality problems. Data preprocessing. Exploratory data analysis, summary statistics, data visualization. Classification of data mining algorithms. Linear regression. Classification algorithms: decision trees, Naive Bayes algorithm, SVM. Classifier evaluation. Clustering algorithms: K-means, hierarchical clustering. Associative analysis. Algorithms for associative rules generation.				
Practical teaching (exercises, OFE, study and research)				
Data mining by using visual tools. Implementation of data mining algorithms in programming languages R and Python.				
Textbooks/references				
1	P.-N.Tan, M. Steinbach, A. Karpatne, V. Kumar: Introduction to data mining, Addison Wesley, Second edition, 2017.			
2	D. T. Larose: Data mining methods and models", JONN WILEY & SONS, 2006			
3	ppt presentations from lectures			
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	1	0		
Teaching methods				
Lectures, auditoral exercises, consultations				
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures			Written exam	
Exercises		20	Oral exam	40
Colloquia				
Projects		40		